



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/573,849	06/19/2006	Marc Burglin	NB/4-22959/A/PCT	4332
324 7590 10/18/2007 CIBA SPECIALTY CHEMICALS CORPORATION PATENT DEPARTMENT 540 WHITE PLAINS RD P O BOX 2005 TARRYTOWN, NY 10591-9005			EXAMINER MARTIN, LAURA E	
			ART UNIT 2853	PAPER NUMBER
			MAIL DATE 10/18/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/573,849

Applicant(s)

BURGLIN, MARC

Examiner

Laura E. Martin

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/29/06</u> | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 2853

## **DETAILED ACTION**

### ***Oath/Declaration***

Receipt of the Supplemental Declaration filed 29 March 2006 is acknowledged.

### **Priority**

Acknowledgement is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed on 29 March 2006.

### ***Information Disclosure Statement***

Acknowledgement is made of the information disclosure statement (IDS) submitted on 29 June 2006. The submission is in compliance with the provisions of 37 CFR 1.97.

### ***Specification***

The abstract of the disclosure is objected to because "comprising" is used in the abstract. Correction is required. See MPEP § 608.01(b).

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the printhead must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

Claims 1, 2, 8 and 9 are objected to because of the following informalities:

As per claim 1: claim recites a (b) but no (a); in the preamble, "fiber" is spelled both "fiber" and "fibre".

As per claim 2: the word "or" is needed after formula 12 and before formula 13, as the disperse dye cannot be of all formulas at once.

As per claim 8: "the transducer" should be "a transducer" or the dependency of claim 8 should be changed to one or both of claims 6 or 7.

As per claim 9: "the polyester-containing fiber" should be changed to "a polyester-containing fiber" as there is no mention of polyester in the independent claim upon which claim 9 is dependent.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

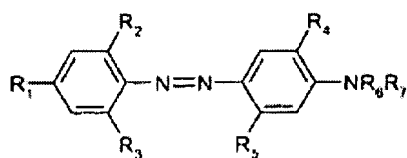
Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burglin et al. (US 6284004 B1) in view of Karlinski (US 5940099 A).

#### **Burglin et al. disclose the following claim limitations:**

As per claim 1: an ink jet printing process for printing textile fiber materials, wherein the fiber materials are printed with an aqueous ink comprising: at least one disperse dye, and glycerol (column 14, lines 1-48 and column 17, lines 19-49), said ink having a viscosity of from 5 to 20 mPa s at 25°C (column 11, lines 5-10).

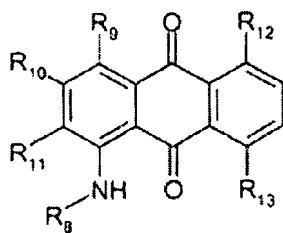
As per claim 2: the disperse dye is of the formula

Art Unit: 2853



(1).

in which

 $R_1$  is halogen, nitro or cyano, $R_2$  is hydrogen, halogen, nitro or cyano, $R_3$  is hydrogen, halogen or cyano, $R_4$  is hydrogen, halogen,  $C_1$ - $C_4$ alkyl or  $C_1$ - $C_4$ alkoxy, $R_5$  is hydrogen, halogen or  $C_2$ - $C_4$ alkanoylamino, and $R_6$  and  $R_7$  independently of one another are hydrogen, allyl,  $C_1$ - $C_4$ alkyl which is unsubstituted or substituted by hydroxy, cyano,  $C_1$ - $C_4$ alkoxy,  $C_1$ - $C_4$ alkoxy- $C_1$ - $C_4$ alkoxy,  $C_2$ - $C_4$ alkanoyloxy, $C_1$ - $C_4$ alkoxycarbonyl, phenyl or phenoxy,

(2).

in which

Art Unit: 2853

$R_8$  is hydrogen,  $C_1$ - $C_4$ alkyl, phenyl or phenylsulfonyl, the benzene ring in phenyl and phenylsulfonyl being unsubstituted or substituted by  $C_1$ - $C_4$ alkyl, sulfo or  $C_1$ - $C_4$ alkylsulfonyloxy.

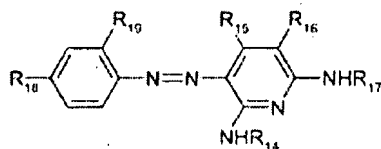
$R_9$  is hydroxy, amino, N-mono- or N,N-di- $C_1$ - $C_4$ alkylamino, phenylamino, the benzene ring in phenyl being unsubstituted or substituted by  $C_1$ - $C_4$ alkyl,  $C_1$ - $C_4$ alkoxy,  $C_2$ - $C_4$ alkanoylamino or halogen.

$R_{10}$  is hydrogen,  $C_1$ - $C_4$ alkoxy or cyano.

$R_{11}$  is hydrogen,  $C_1$ - $C_4$ alkoxy, phenoxy or the radical  $-O-C_6H_5-SO_2-NH-(CH_2)_3-O-C_2H_5$ .

$R_{12}$  is hydrogen, hydroxy or nitro, and

$R_{13}$  is hydrogen, hydroxy or nitro.



(3).

in which

$R_{14}$  is  $C_1$ - $C_4$ alkyl which is unsubstituted or substituted by hydroxy,

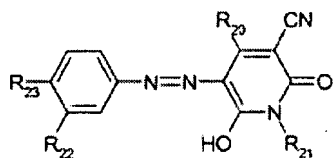
$R_{15}$  is  $C_1$ - $C_4$ alkyl,

$R_{16}$  is cyano.

$R_{17}$  is the radical of the formula  $-(CH_2)_3-O-(CH_2)_2-O-C_6H_5$ .

$R_{18}$  is halogen, nitro or cyano, and

$R_{19}$  is hydrogen, halogen, nitro or cyano.



(4).

in which

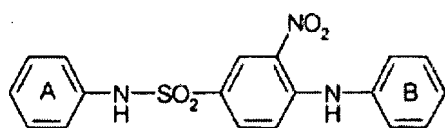
$R_{20}$  is  $C_1$ - $C_4$ alkyl,

$R_{21}$  is  $C_1$ - $C_4$ alkyl which is unsubstituted or substituted by  $C_1$ - $C_4$ alkoxy and

$R_{22}$  is the radical  $-COOCH_2CH_2OC_6H_5$  and  $R_{23}$  is hydrogen or

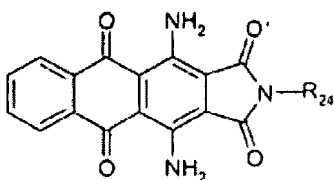
$R_{22}$  is hydrogen and  $R_{23}$  is the radical  $-N=N-C_6H_5$ .

Art Unit: 2853



(5).

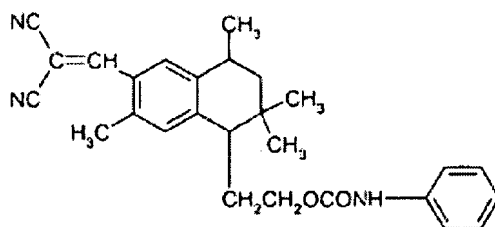
where the rings A and B are unsubstituted or substituted one or more times by halogen,



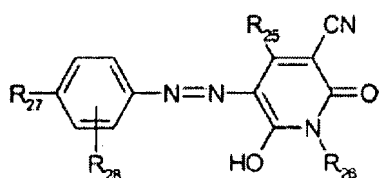
(6).

in which

$R_{24}$  is  $C_1$ - $C_4$ alkyl, which is unsubstituted or substituted by hydroxy,  $C_1$ - $C_4$ alkoxy,  $C_1$ - $C_4$ -alkoxy- $C_1$ - $C_4$ alkoxy,  $C_2$ - $C_4$ alkanoyloxy or  $C_1$ - $C_4$ alkoxycarbonyl,



(7).



(8).

in which

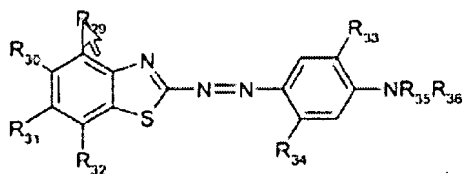
$R_{25}$  is  $C_1$ - $C_4$ alkyl,

$R_{26}$  is  $C_1$ - $C_4$ alkyl, which is unsubstituted or substituted by  $C_1$ - $C_4$ alkoxy,

$R_{27}$  is hydrogen,  $C_1$ - $C_4$ alkoxy or halogen, and

$R_{28}$  is hydrogen, nitro, halogen or phenylsulfonyloxy,





(9).

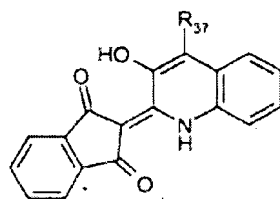
in which

R<sub>29</sub>, R<sub>30</sub>, R<sub>31</sub> and R<sub>32</sub> independently of one another are hydrogen or halogen,

R<sub>33</sub> is hydrogen, halogen, C<sub>1</sub>-C<sub>4</sub>alkyl or C<sub>1</sub>-C<sub>4</sub>alkoxy,

R<sub>34</sub> is hydrogen, halogen or C<sub>2</sub>-C<sub>4</sub>alkanoylamino, and

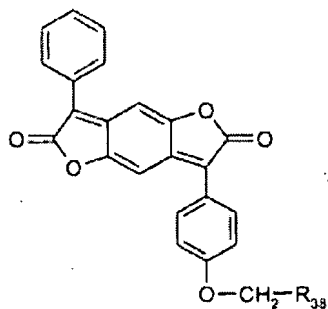
R<sub>35</sub> and R<sub>36</sub> independently of one another are hydrogen, C<sub>1</sub>-C<sub>4</sub>alkyl, which is unsubstituted or substituted by hydroxy, cyano, acetoxy or phenoxy,



(10).

in which

R<sub>37</sub> is hydrogen or halogen,

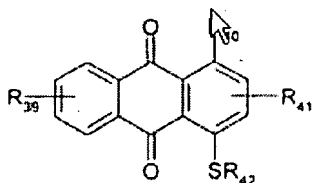


(11).

in which

R<sub>38</sub> is hydrogen, C<sub>1</sub>-C<sub>4</sub>alkyl, tetrahydrofuran-2-yl or C<sub>1</sub>-C<sub>4</sub>alkoxycarbonyl, which is unsubstituted or substituted in the alkyl by C<sub>1</sub>-C<sub>4</sub>alkoxy.

Art Unit: 2853



(12),

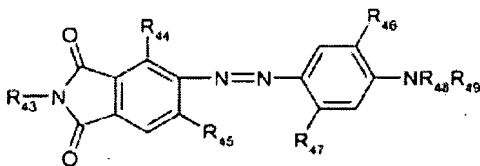
in which

$R_{39}$  is hydrogen or thiophenyl, which is unsubstituted or substituted in the phenyl by  $C_1$ - $C_4$ alkyl or  $C_1$ - $C_4$ -alkoxy,

$R_{42}$  is hydrogen, hydroxy or amino,

$R_{41}$  is hydrogen, halogen, cyano or thiophenyl, which is unsubstituted or substituted in the phenyl by  $C_1$ - $C_4$ alkyl or  $C_1$ - $C_4$ -alkoxy, phenoxy or phenyl, and

$R_{42}$  is phenyl, which is unsubstituted or substituted by halogen,  $C_1$ - $C_4$ alkyl or  $C_1$ - $C_4$ -alkoxy,



(13),

in which

$R_{43}$  is hydrogen or  $C_1$ - $C_4$ alkyl,

$R_{44}$  and  $R_{45}$  independently of one another are hydrogen, halogen, nitro or cyano,

$R_{46}$  is hydrogen, halogen,  $C_1$ - $C_4$ alkyl or  $C_1$ - $C_4$ alkoxy,

$R_{47}$  is hydrogen, halogen or  $C_2$ - $C_4$ alkanoylamino, and

$R_{48}$  and  $R_{49}$  independently of one another are hydrogen or  $C_1$ - $C_4$ alkyl, which is unsubstituted or substituted by hydroxy, cyano,  $C_1$ - $C_4$ alkoxy,  $C_1$ - $C_4$ alkoxy- $C_1$ - $C_4$ alkoxy,  $C_2$ - $C_4$ alkanoyloxy,

$C_1$ - $C_4$ alkoxycarbonyl, phenyl or phenoxy.

(column 1, line 45- column 4, line 15 – dye can be any of the above formulas).

As per claim 3: the ink comprises glycerol in an amount from 5 to 60% by weight based on the total weight of the ink (column 14, lines 1-48 and column 17 lines 19-49).

As per claim 4: the viscosity of the ink is from 6 to 14 mPa s at 25°C (column 11, lines 5-10).

Art Unit: 2853

As per claim 5: the ink comprises dyethylene glycol or dipropylene glycol (column 17, lines 19-49).

As per claim 8: a transducer is a piezoelectric element (column 12, lines 16-31).

As per claim 9: polyester-containing fiber materials are printed (column 12, lines 40-45).

As per claim 10: at least one disperse dye selected from the group of dyes of the formulae (1) to (13), from 10 to 35% by weight of glycerol based on the total weight of the ink, and from 10 to 25% by weight of dypropylene glycol based on the total weight of the ink (column 17, lines 19-49), said ink having a viscosity of from 5 to 20 mPa s at 25°C (column 11, lines 5-10).

**Burglin et al. do not disclose the following claim limitations:**

As per claim 1: ink is applied to the material with an ink jet printing head comprising an ink supply layer receiving from an external ink reservoir, said ink supply layer having a first side and a second side and comprising a porous medium having a plurality of pores therein and a plurality of holes extending therethrough so as to allow passage of the ink.

As per claim 6: printing performed by means of an ink-jet printing device provided with at least one ink-jet print head which comprises a nozzle layer defining a plurality of ejection nozzles, an ink supply layer which is formed from a porous material having a multitude of small interconnected pores so as to allow passage of ink therethrough, said ink supply layer featuring a plurality of connecting bores from the rear surface to the front surface, each of said connecting bore being aligned so as to connect between a

Art Unit: 2853

corresponding one of said ejection nozzles and - a deflection layer, comprising a plurality of transducers related to said connecting bores for ejecting ink droplets out through the nozzles.

As per claim 7: printing is performed by means of an ink-jet printing device provided with at least one ink-jet print head which comprises a nozzle layer defining a plurality of ejection nozzles, an ink supply layer having a front surface associated with the nozzle layer and a rear surface associated with a cavity layer, said ink supply layer being formed with a plurality of connecting bores from said rear surface to said front surface, each connecting bore being aligned so as to connect between a corresponding one of said ink cavities and a corresponding one of said ejection nozzles, wherein said ink supply layer additionally features: a pattern of ink distribution channels formed in said front surface, and at least one ink inlet bore passing from said rear surface to said front surface and configured so as to be in direct fluid communication with at least part of said pattern of ink distribution channels, said pattern of ink distribution channels and said at least one ink inlet bore together defining part of an ink flow path which passes from said rear surface through said at least one ink inlet bore to said pattern of ink distribution channels on said front surface, and through said porous material to said plurality of ink cavities: and a deflection layer (c), comprising a plurality of transducers related to said connecting bores for ejecting ink droplets out through the nozzles

**Karlinski discloses the following claim limitations:**

As per claim 1: ink is applied to the material with an ink jet printing head comprising an ink supply layer (figure 2, element 20) receiving from an external ink

Art Unit: 2853

reservoir (claim 1), said ink supply layer having a first side and a second side and comprising a porous medium having a plurality of pores (column 2, lines 55-60) therein and a plurality of holes extending therethrough so as to allow passage of the ink (figure 2).

As per claim 6: printing performed by means of an ink-jet printing device provided with at least one ink-jet print head which comprises a nozzle layer (figure 2, element 34) defining a plurality of ejection nozzles, an ink supply layer (figure 2, element 20) which is formed from a porous material having a multitude of small interconnected pores so as to allow passage of ink therethrough, said ink supply layer featuring a plurality of connecting bores from the rear surface to the front surface, each of said connecting bore being aligned so as to connect between a corresponding one of said ejection nozzles (figure 2) and a deflection layer (figure 2, element 14), comprising a plurality of transducers related to said connecting bores for ejecting ink droplets out through the nozzles.

As per claim 7: printing is performed by means of an ink-jet printing device provided with at least one ink-jet print head which comprises a nozzle layer (figure 2, element 34) defining a plurality of ejection nozzles, an ink supply layer (figure 2, element 20) having a front surface associated with the nozzle layer and a rear surface associated with a cavity layer (figure 2, element 22), said ink supply layer being formed with a plurality of connecting bores from said rear surface to said front surface (figure 2, element 18), each connecting bore being aligned so as to connect between a corresponding one of said ink cavities and a corresponding one of said ejection nozzles,

Art Unit: 2853

wherein said ink supply layer additionally features: a pattern of ink distribution channels formed in said front surface, and at least one ink inlet bore passing from said rear surface to said front surface and configured so as to be in direct fluid communication with at least part of said pattern of ink distribution channels, said pattern of ink distribution channels and said at least one ink inlet bore together defining part of an ink flow path which passes from said rear surface through said at least one ink inlet bore to said pattern of ink distribution channels on said front surface, and through said porous material to said plurality of ink cavities (figure 2), and a deflection layer, comprising a plurality of transducers related to said connecting bores for ejecting ink droplets out through the nozzles (figure 2, element 14).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the process taught by Burglin et al. with the disclosure of Karlinski in order to improve the printing process. It is well known in the art that different types of ink jet printheads can be used in printing ink.

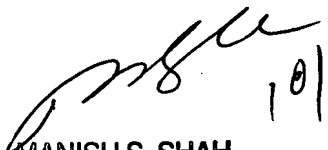
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura E. Martin whose telephone number is (571) 272-2160. The examiner can normally be reached on Monday - Friday, 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2853

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Laura E. Martin

  
10/12/07  
MANISH S. SHAH  
PRIMARY EXAMINER